~~Patent Claims~~

1. A device for determining the extent of an at least locally lateral undercut of a structured surface layer (23) on a sacrificial layer (21),
characterized in that the structured surface layer (23) has locally at least one passive electronic component (31), using which a physical measured quantity can be determined which is proportional to the extent of the lateral undercut.

2. The device as recited in Claim 1,
characterized in that the physical measured quantity is a capacitance, an absorbed or emitted intensity of an electromagnetic emission, an absorbed or emitted frequency, in particular a resonance frequency, or an absorbed or emitted frequency spectrum of an electromagnetic emission.

3. The device as recited Claim 1,
characterized in that at least one transmitter (43) is provided, which emits a first signal, and at least one receiver (44) is provided, which detects a second signal, the passive electronic component (31) interacting with the first signal and, in this context, generating the second signal or transforming the first signal into the second signal.

4. The device as recited in Claim 3,
characterized in that the physical measured quantity can be determined from the second signal or from the difference between the first and the second signal.

5. The device as recited in Claim 3,
characterized in that the transmitter (43) and the receiver (44) are integrated in one assembly, in particular a processing unit (40), and/or that the transmitter (43) is at the same time also a receiver (44).

6. The device as recited in Claim 3,
characterized in that the first signal is a voltage applied to the passive electronic component (31); an intensity of an electromagnetic emission; a high-frequency power output, emitted continuously or in pulses and emitted into the passive electronic component (31), the high-

frequency power output having a preestablished frequency or preestablished frequency spectrum; or a sequence of chirped high-frequency pulses or broadband noise pulses of an electromagnetic emission, and that the second signal is an electrical voltage; an absorbed or emitted intensity of an electromagnetic emission; or a frequency, in particular a resonance frequency, or a frequency spectrum of an electromagnetic emission.

7. The device as recited in Claim 1,
characterized in that the passive electronic component (31) is a coil (30) delineated out in the surface layer (23), the coil having a first coil end (13) and a second coil end (12), the coil (30) along with a base layer (20) constituting a capacitor, the sacrificial layer (23) functioning as dielectric, the capacitance C of the capacitor being proportional to the extent, to be determined, of the lateral undercut of the surface layer (23).

8. The device as recited in Claim 7,
characterized in that the coil (30), together with its capacitance C, forms an oscillating circuit having a resonance frequency f_0, whose change Δf_0 is proportional to the extent, to be determined, of the lateral undercut of the surface layer (23).

9. The device as recited in Claim 7,
characterized in that a plated through-hole (22) is provided, which connects one of the coil ends (12, 13) to the base layer 20).

10. The device as recited in Claim 7,
characterized in that at least one of the coil ends (12, 13) is dimensioned in its extent such that a complete undercut of the coil end (12, 13) does not occur.

11. The device as recited in Claim 1,
characterized in that the structured surface layer (23), at least in the area of the passive electronic component (31), is separated from a base layer (20) by the sacrificial layer (21).

12. The device as recited in Claim 11,
characterized in that the base layer (20) is composed at least essentially of silicon or polysilicon, or it is a silicon wafer.

13. The device as recited in Claim 1,
characterized in that the surface layer (23), at least in the area of the passive electronic component (31), is at least weakly electrically conductive and is composed especially of silicon or polysilicon or of surface-metallized or doped silicon or polysilicon.

14. The device as recited in Claim 1,
characterized in that the sacrificial layer (21), at least in the area of the passive electronic component (31), is electrically insulating and is particularly composed of a silicon oxide layer.

15. The device as recited in Claim 1,
characterized in that the surface layer (23) is provided with trenches (15, 15') that extend in depth down to the sacrificial layer (21).

16. The device as recited in Claim 15,
characterized in that the trenches (15) border a structure (11), to be undercut, in the surface layer (23).

17. A method for determining the extent of the lateral undercut of a structured surface layer (23) on a sacrificial layer (21), in a first etching method the surface layer (21) being provided at least locally with a structure having trenches (15') and in a second etching method, beginning from the trenches (15'), a lateral undercut of the structured surface layer (23) being generated at least locally,
characterized in that in the first etching method at least one passive electronic component (31) is locally additionally delineated out of the surface layer (23), the component also being undercut in response to the undercut of the surface layer (23), and, in response to the undercut, a physical measured quantity proportional to the extent of the undercut being determined, using the component.

18. The method as recited in Claim 17,
characterized in that the structuring of the surface layer (23) takes place through a masking.

19. The method as recited in Claim 17,

characterized in that the sacrificial layer (21) is applied on a base layer (20).

20. The method as recited in Claim 17,
characterized in that the delineating out of the component (31) takes place through the etching of trenches (15).

21. The method as recited in Claim 17,
characterized in that a coil (30) is delineated out of the surface layer (23) as a passive electronic component (31).

22. The method as recited in Claim 21,
characterized in that in response to the undercut of the coil (30), the resonance frequency of an oscillating circuit formed on the basis of the coil (30) is measured, and the extent of the lateral undercut is determined therefrom.